



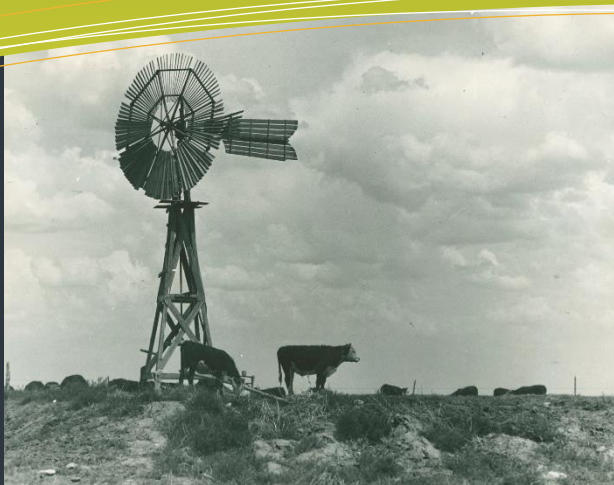
Meet the Southern Plains Climate Hub's Forest Service co-lead Dr. Alex Krichels in this month's Staff Corner

Over the course of the next few issues of the newsletter we want to introduce all of you to our hub team. As part of this effort, this month we want to highlight our Forest Service co-lead Dr. Alex Krichels.

Alex is a Research Ecologist with the Rocky Mountain Research Station's Maintaining Resilient Dryland Ecosystems program. Alex developed an interest in ecology while growing up in central Pennsylvania, where he spent his free time hiking, running, and biking in the Appalachian Mountains.

In college, Alex majored in Biology and Environmental Sciences and became

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- Meet our Hub co-lead
- ARS researchers working to protect aging dams
- USDA invests in clean energy; strengthens Rural America's power grid

How does a changing climate impact dams? The Agriculture Research Service is looking for the answers

How do the extreme weather changes resulting from climate change impact the condition of our nation's aging dams? Do sudden shifts from extreme precipitation events to flash droughts put this infrastructure at risk? These are the types of questions researchers like Dr. Sherry Hunt, a research leader and acting location coordinator at the USDA Agricultural Research Service's (ARS) Agroclimate and Hydraulic Engineering Research Unit in Stillwater, Oklahoma, are attempting to answer.

"Changes in weather patterns are affecting the levels of the permanent pools in our reservoirs across the country, including those that were built under the USDA Upstream Flood Control Program," Dr. Hunt said. "We need the best information on how this is happening and what impact it is having."

Originally established in 1940 as a partnership between ARS and Oklahoma A&M College (now Oklahoma State University), the ARS Agroclimate and Hydraulics Engineering Research Unit (Unit) is the primary lab in the ARS system for developing improved dam structure design and providing information on how to maintain and rehabilitate aging water retention structures. With nearly 12 thousand USDA upstream flood control dams nationwide, two-thirds of which are past their original design life, Dr. Hunt believes the research provided by this facility is more important than ever.

"As our climate continues to change and we see more and more volatility in our weather, we potentially see more pressure on these structures. That makes the work we do that much more critical." Dr. Hunt said.

One area of focus by the team at the Unit has been the development of small, affordable sensors such as meteorological stations and water quality and quantity monitors for

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Staff Corner Continued-

interested in how climate change is affecting natural ecosystems. Building on this interest, Alex spent two summers in Alaska studying the effects of global warming on the productivity of tundra ecosystems. Inspired by this work, Alex studied how agricultural systems contribute to climate change during his PhD at the University of Illinois. After graduating from the University of Illinois, Alex moved to California to study how other global change factors such as drought and wildfires affect the functioning of natural ecosystems. All this work solidified Alex's desire to understand how global climate change is affecting natural and managed ecosystems and how humans can mitigate and adapt to these global changes. As such, it was a natural fit for Alex to start working for the US Forest Service and the Southern Plains Climate Hub in 2023. For his new position, Alex is researching how ecosystem restoration efforts affect carbon storage in soils. Soils are a vital tool in fighting global climate change because they can store carbon that would otherwise persist in the atmosphere as carbon dioxide, a strong greenhouse gas. Alex hopes to work with practitioners through the Southern Plains Climate Hub to learn what information they need to deal with the multifaceted threats that are posed by climate change.

installation in and around aging upstream flood control structures. These stations would monitor conditions such as soil moisture levels, reservoir water levels, wind speed, rainfall, humidity, and barometric pressure to provide more up-to-date raw data to our partners and other existing dam monitoring systems they use in an effort to help improve dam safety and provide early warnings when a dam is in danger of overtopping or breaching.

“Right now, there are some great dam monitoring tools that are available to local watershed sponsors and their partners in State and Federal Government,” Dr. Hunt said. “Unfortunately, most of these tools were designed with a ‘static’ pool of water in mind. This means that they may not have a full picture of what is happening in a reservoir when we see dramatic shifts from drought to heavy rain events. By positioning small, affordable meteorological stations and water monitoring sensors in and around these structures, we can help better inform these systems on what is happening in real-time to these dams. We also can help monitor water quality issues, especially those like blue-green algae blooms that are drastically impacted by rapid decreases or increases in water levels.”

While still in the development stage, Dr. Hunt and her team are hopeful that with the continued collaborations and partnerships, she has established with the ARS Partnerships in Data Innovations, the USDA Natural Resources Conservation Service, and Universities around the country, this system will soon start rolling out to the field to provide more protection for people and property below while also providing up to date information for new dam design and construction.

“The more information we have, the better job we can do in helping ensure that this critical infrastructure continues to provide protection from extreme flood events,” Dr. Hunt said.

Interested in tools dealing with climate change and agriculture? The Hub has you covered-check out these online options:

- The Global Farm Animals Ration Program
<https://www.climatehubs.usda.gov/hubs/international/tools/global-farm-animals-ration-programs>
- The Quick Climate Reference Guide
<https://www.climatehubs.usda.gov/hubs/tools/climate-quick-reference-guides>
- The Ag Risk Viewer
<https://www.climatehubs.usda.gov/hubs/southwest/tools/agrisk-viewer>
- Grass-Cast Grassland Productivity Forecast
<https://www.climatehubs.usda.gov/hubs/northern-plains/tools/grass-cast-grassland-productivity-forecast>

Check out these and other tools at:

<https://www.climatehubs.usda.gov/tools/all?page=0>

Hub, BIA host Drought Workshops for Tribal Nations

On May 24 and 25, The Southern Plains Climate Hub (Hub) and the Bureau of Indian Affairs (BIA) came together to host two Drought Workshops for Tribal Nations in El Reno and Bixby, Oklahoma. According to Sheena Schemm, Regional Coordinator with the BIA Tribal Climate Resilience Branch, the meetings were a great way to both provide information to Tribal members and their governments on drought preparedness while also allowing for intertribal discussions and networking.



“This is a great way to not only host a great lineup of speakers, but also network and share ideas among agencies,” Schemm Said. “The structures of both workshops were based on input from the Nation’s themselves and we feel that they were a great success.”

The first of the workshops, held on May 24 at the Darlington Ag Campus of Redlands Community College, featured a diverse lineup of speakers presenting on subjects ranging from writing drought plans, grazing livestock, harvesting rainwater, soil health, and the various government programs available to Tribal nations. The second meeting, held at the Euchee Butterfly Farm in Bixby, Oklahoma had a similar line-up with additional presentations on the U.S. Drought Monitor and on the work being done by Tribal Governments on water planning in south eastern Oklahoma. Both programs concluded with rain barrels being provided to a few lucky participants to take home and use as part of their own personal drought mitigation plan. In all, representatives from 15 Oklahoma tribes participated.

Based on the response from those in attendance, Schemm said that she was looking forward to additional future projects between the Hub and BIA.

“We are very happy with the results of these first Oklahoma

outreach workshops,” Schemm said. “We hope that this is just the start of a series of successful efforts between the Hub and the BIA Tribal Climate Resilience Branch and that we can find more ways to help distribute scientific and practical information on climate issues to Tribal Governments and Tribal members.”

Additional meetings are being planned for later in the Summer in Kansas.



USDA Makes Historic \$11 Billion Investment to Advance Clean Energy Across Rural America

On May 16 USDA announced the availability of nearly \$11 billion in grants and loan opportunities that will help rural energy and utility providers bring affordable, reliable clean energy to their communities across the country. This represents the single largest investment in rural electrification since President Franklin D. Roosevelt signed the Rural Electrification Act into law in 1936.

Funding is available through two programs under the Inflation Reduction Act, which makes the nation’s largest-ever investment in combatting the climate crisis. Specifically, the U.S. Department of Agriculture (USDA) will be opening a Letter of Interest process for the Empowering Rural America (“New ERA”) program, which makes \$9.7 billion available to eligible rural electric cooperatives to deploy renewable energy systems, zero-emission systems, and carbon capture systems.

In addition to New ERA, USDA will also be opening a Letter of Interest process for the Powering Affordable Clean Energy (PACE) program, which makes \$1 billion available in partially forgivable loans to renewable-energy developers and electric service providers, including municipals, cooperatives, and investor-owned and Tribal utilities to help finance large-scale solar, wind, geothermal, biomass, hydropower projects, and energy storage in support of renewable energy systems.

More information on the New ERA program is available at www.rd.usda.gov/programs-services/electric-programs/empowering-rural-america-new-era-program.

More information on the PACE program is available at www.rd.usda.gov/programs-services/electric-programs/powering-affordable-clean-energy-pace-program.

For more information on the Inflation Reduction Act, visit:

www.rd.usda.gov/inflation-reduction-act.

UPCOMING EVENTS

Sustainable Farming in a Changing Climate Seminar

June 10, 2023

Tipton High School FFA Facility

1000 S. Broadway

Tipton, Oklahoma

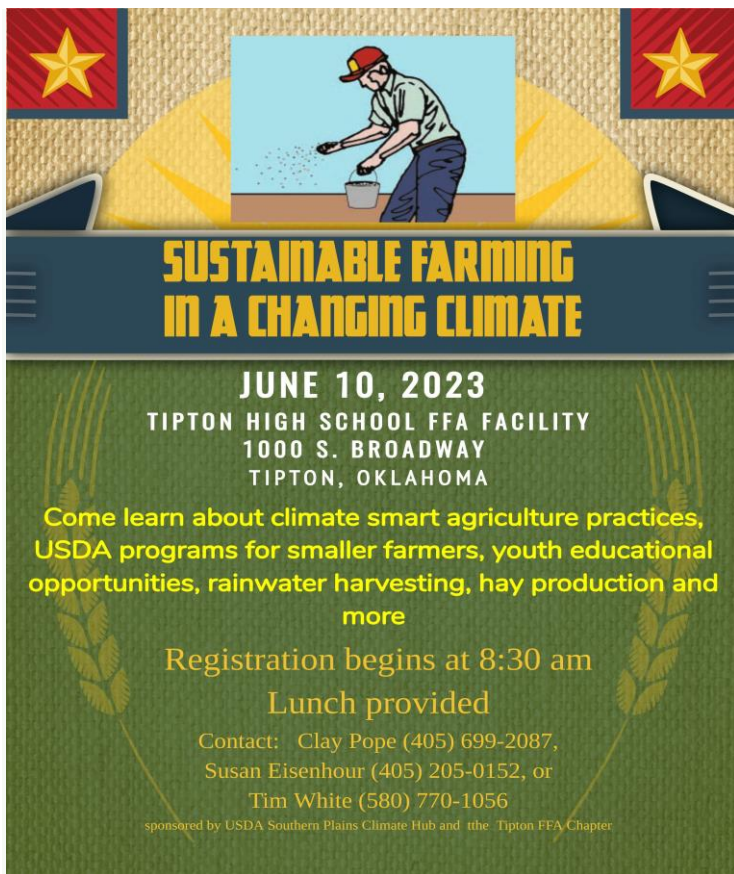
Come and learn about climate-smart ag practices, USDA programs, hay production, and more!

Registration begins at 8:30-Lunch provided.

For more info contact Clay Pope at 405-699-2087

Susan Eisenhour 405-205-0152 or

Tim White (508) 770-1056



The poster features a central illustration of a farmer in a red cap and blue shirt working in a field. The background is a textured, golden-brown color with two red squares containing yellow stars. Below the illustration, the title "SUSTAINABLE FARMING IN A CHANGING CLIMATE" is written in bold, yellow, sans-serif font. The date "JUNE 10, 2023" is prominently displayed in white, followed by the location "TIPTON HIGH SCHOOL FFA FACILITY, 1000 S. BROADWAY, TIPTON, OKLAHOMA" in white. The text "Come learn about climate smart agriculture practices, USDA programs for smaller farmers, youth educational opportunities, rainwater harvesting, hay production and more" is written in yellow. Below this, it says "Registration begins at 8:30 am" and "Lunch provided" in white. Contact information for Clay Pope, Susan Eisenhour, and Tim White is listed in white. At the bottom, it mentions sponsorship by USDA Southern Plains Climate Hub and the Tipton FFA Chapter.

**SUSTAINABLE FARMING
IN A CHANGING CLIMATE**

JUNE 10, 2023
TIPTON HIGH SCHOOL FFA FACILITY
1000 S. BROADWAY
TIPTON, OKLAHOMA

Come learn about climate smart agriculture practices, USDA programs for smaller farmers, youth educational opportunities, rainwater harvesting, hay production and more

Registration begins at 8:30 am
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Contact: Clay Pope (405) 699-2087,
Susan Eisenhour (405) 205-0152, or
Tim White (580) 770-1056

sponsored by USDA Southern Plains Climate Hub and the Tipton FFA Chapter

Texas NRCS Quarterly Watershed Program Update

Aug. 24, 2023

Nov. 10, 2023

Virtual—2 pm start time

The USDA Natural Resources Conservation Service (NRCS) Texas Watershed Program has scheduled quarterly conference calls throughout 2023 to keep watershed sponsors and others interested in Texas's watershed program up to date on current and upcoming program activity.

The NRCS Landscape and Planning staff in Temple, Texas, will provide information on program opportunities and requirements related to Watershed Operations, Watershed Rehabilitation and Emergency Watershed Protection programs.

These quarterly meetings will be presented via Microsoft Teams.

To receive an email notification about these meetings, send an email request to Watershed Program Staff at RC.TX-NRCS-WSPGMS@usda.gov. The invitation will include an audio line for calling into the meeting for participants unable to connect through MS Teams.

UPCOMING EVENTS

SAVE
THE
DATE



Wildlife Management Conference

June 22-23, 2023

Texas Wildlife Association Headquarters
6644 FM1102
New Braunfels, TX 78132



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For more information, contact:

Derrick Banks
PVAMU Extension Program Specialist
(Wildlife Management)

2023 PVAMU CEP Wildlife Management Conference

Thu Jun 22 2023 at 08:00 am

Texas Wildlife Association, 6644 Farm to Market Road 1102, New Braunfels, Texas

For more information, please contact:

Derrick Banks, PVAMU Extension Program Specialist (Wildlife Management)

(936)261-5133

Savannah Harrington, PVAMU Extension Agent-AgNR (Guadalupe & Gonzales County)

(830)303-3889

UPCOMING EVENTS

OSU Cattlewomen's Boot Camp

June 5-7, 2023

Creek County Fairgrounds

Kellyville, OK

\$150.00 per attendee

This program will be a three-day workshop that will combine traditional educational programming with hands-on demonstration and activities and classroom exercises. Topics that will be covered include but are not limited to:

Cattle Evaluation

Calf Management

Herd Nutrition

Hay Evaluation

Forage Production

Marketing

Production and Financial Records

Farm Transitions

General Management Practices

Farm Business Planning

Herd Health and Vaccinations

Facility Management and Selection

Reproduction Management

Calving Management

For more information contact:

JJ Jones,

Southeast District Ag Econ Specialist,

(580) 332-7011 or jj.jones@okstate.edu

UPCOMING EVENTS

2023 Nitrogen use Efficiency Workshop

August 7th at 5 pm - August 9th at 12 pm

Oklahoma State University ConocoPhillips OSU Alumni Center

201 ConocoPhillips OSU Alumni Center

Stillwater, OK 74078

Registration is limited to first 160!

To register go to <https://extension.okstate.edu/events/2023-nitrogen-use-efficiency-workshop/index.html>

In 2003

Dr. Bill Raun and Dr. Jim Schepers arranged the first NUE. conference in Stillwater OK.

The focus of the meeting was a discussion of current management strategies and presentations on potential methods to improve NUE. The meeting had 24 researchers and industry specialist from Oklahoma, Nebraska, Colorado, Kansas, Virginia, Iowa, Maryland, and Brazil. Last year UNL hosted the meeting which included 170 attendees with 37% were graduate students. To this date the conference organizers have been able to work with industry to provide this event at no cost to all who attend. For years this meeting was known for the lively discussion that spurred enthusiastic research and discovery.